

What is claimed is:

1. A method for powering movement of a structure, comprising:

moving a structure to generate a force against a material comprising a plurality of layers
and a plurality of voids, the voids between the layers;

5 reducing a thickness of the material in response to the force to generate a charge;
using the charge to power subsequent movement of the structure.

2. The method of claim 1 wherein each of the plurality of layers is a polyolefin layer.

10 3. The method of claim 1 wherein the material is a fabric material.

4. The method of claim 1 wherein the structure comprises at least one rotational part
and wherein the material is operatively connected to the rotational part.

15 5. The method of claim 4 wherein the at least one rotational part includes a tire
comprising a plurality of radial plies and wherein the material is integrated between radial
plies.

20 6. The method of claim 4 wherein the at least one rotational part includes a tire, the
tire having an outer wall for contact with a surface and opposite side walls, the tire body
comprising a plurality of radial plies and the material forms at least one pad integrated
between the radial plies.

25 7. An apparatus for converting rotational movement against a surface into electrical
energy, comprising:
a tire body;
the tire body having an outer wall for contact with the surface and opposite sidewalls;
the tire body comprising a plurality of radial plies;
at least one pad integrated between the radial plies.

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8. The apparatus of claim 7 further comprising a wheel associated with the tire body, the tire body mounted to the wheel.

9. The apparatus of claim 7 wherein the pad comprises a ceramic material.

10. The apparatus of claim 7 wherein the pad comprises a polymeric film material.

11. The apparatus of claim 7 wherein the pad comprises a plurality of layers and a plurality of voids between the layers.

12. The apparatus of claim 8 further comprising an electrical connection between each of the at least one pad and a circuit position on the wheel.

13. The apparatus of claim 12 wherein the circuit portion includes an operational amplifier.

14. A vehicle, comprising:

a vehicle body;

a plurality of wheels operatively connected to the vehicle body;

at least one of the wheels comprising a tire body having an outer wall and opposite side walls, the tire body comprising a plurality of radial plies, and at least one pad integrated between the radial plies for converting force against the tire associated with movement of the tire into electrical energy.

15. The vehicle of claim 14 wherein the vehicle body is a golf cart body.

16. The vehicle of claim 14 wherein the at least one pad produces electrical energy in response to changes in thickness and not changes in strain.

17. The vehicle of claim 16 wherein the at least one pad is formed from a plurality of layers of polymeric film.